THE TREATMENT OF HYDATID OF THE
LIVER.

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THIS question has been again raised by an interesting paper from the pen of Mr. Philip Buckley¹ of Salford, who narrates a case in which a brilliantly successful result followed the total extirpation of two small cysts from the liver of a young girl. He asks for a general reconsideration of the attitude of the profession towards this disease, and considers that in a fair proportion of cases, especially in young people, it may be found possible to remove hydatid, adventitious cyst and all, at one sitting, thus leaving a clean wound in the liver, which it may frequently be found possible to suture after the manner in which the uterus is sutured in a myomectomy. The advantages would undoubtedly be more rapid healing and less liability to the formation of adhesions. I may be pardoned for giving an account of our experience at the Royal Prince Alfred Hospital during the last couple of years, during which 70 cases have been submitted to operation.

I should, however, like to criticize the pathology as stated in Buckley's paper. He uses the term "ectocyst" as equivalent to "adventitious cyst"—a use of terms which is common, but none the less incorrect. Before proceeding further it would be as well to give an account of the pathology as generally accepted. The hydatid proper consists of a mother cyst, composed of two thin cyst walls fused one with another—the ectocyst, a laminated layer; and the endocyst, a granular layer. This mother cyst lies within an adventitious cyst, composed of fibrous elements due to the reaction of the tissues of the host against a mildly irritating foreign body. I am not aware that this adventitious cyst contains any elements drawn from the parasite. Although a great many cases have been carefully examined in our laboratories in Sydney no such elements have ever been found, and I should be grateful to Mr. Buckley if he can give a reference to any authority who shows otherwise. Normally the mother cyst is slightly adherent to the surrounding wall of the adventitious cyst, but as a rule it is quite easy to draw it out once the adventitia has been freely opened and the fluid allowed to escape from the hydatid.

The criticism which I should be disposed to make on Buckley's suggestion is, that he proposes to turn a safe operation into a very serious one. The ordinary operation of marsupialization, in small cysts, performed by a competent surgeon, is probably the most trifling in abdominal surgery, if any abdominal operation can be called trifling; and the results in such cases are equal to those of any other operation whatever. Why, therefore, deliberately go out of one's way to perform a dangerous operation, which may involve risk of great hæmorrhage, and may result in leaving a large raw cavity in the liver? Any operating surgeon will testify to the great difficulty always found in accurately closing wounds of the liver; the numerous methods which have been devised with this end in view bear full witness to the nature of the problem. Frequently it is found impossible, and the surgeon ends by packing the cavity with gauze; and it is difficult to see where the advantage lies in this over the simple method of leaving a tube in an adventitious cyst. I freely admit that in the cases mentioned by Mr. Buckley it is quite possible, and not necessarily difficult, to extirpate the adventitia; but these are the very cases which can be easily cured by an operation of marsupialization taking ten minutes, without appreciable risk, and with an easy and rapid convalescence. I fancy the prejudice against marsupialization is founded on the results of difficult and complicated cases, which could not be cured by any other method.

Of our last 70 cases in the Prince Alfred Hospital, 34 were males and 36 females. Only three were less than 10 years of age; but this does not represent the true incidence, as a considerable number of children with hydatids are treated at the Royal Alexandra Hospital for Children. There were 7 deaths, all in complicated cases. No case of simple hydatid, treated by marsupialization, died. A remarkable feature was that no fewer than

12 cases had already been operated upon for the same condition; none of these had been infected at the previous operation, but all of them were obviously cases of latent cysts which had grown since the first operation, or else of reinfection from dogs in the house. One case came back again no less than twelve years later.

Another surprising thing is that in 19 cases the hydatid was suppurating, and in two of these rupture had taken place. Two died.

Four cases had ruptured, and of these 3 died.

Of the 7 deaths, 2, as already stated, were in suppurating cases; they died from exhaustion. The average mortality from ordinary abscess of the liver, or from subphrenic abscess, is probably considerably higher than 10 per cent. Three other deaths were in ruptured cases, general peritonitis ending the scene. It must be remembered that the liver is a great destroyer of germs from the portal system, and it is possible that some of these escape into the abdomen when a hydatid ruptures, and thus set up peritonitis. There is no doubt that rupture of a hydatid of the liver into the abdomen is a very fatal accident. Two of the cases were already suppurating.

The other two deaths were in complicated cases. One was an old man with three large cysts, two in the liver, and one in the spleen. He had a fatty heart and was in a most feeble and debilitated condition. He might have died from a trifling operation of any kind, or from a broken leg. The other was a woman with general waxy disease and old tuberculous peritonitis.

Most of the simple cases left the hospital in from three to six weeks, the period depending apparently more on the practice of the surgeon than on any other cause. That the sooner the tube could be removed the sooner the cyst closed up seemed to be the general rule. Since I have been removing the tube in four or five days convalescence has been much quicker in my own cases. The longest time in hospital was sixteen weeks, in a suppurating case. One feeble old man developed pneumonia, and was fourteen weeks in hospital. One had hectic; lime deposits formed in the sinus, which had to be scraped out; he was fourteen weeks in hospital. One was entirely healed at the end of three weeks. The others were all discharged with a trifling sinus about 1 in. long, which in every case seems to have closed entirely at the end of a few days.

It must be remembered that in many cases the cysts were gigantic, holding quarts of fluid; almost it became a question whether the hydatid was parasitic on the man or the man on the hydatid. Some of these country patients seem to go on for years in comparative ill health without troubling to seek advice; perhaps their lonely lives develop along a groove, and they do not care to face the long journey and the hurrying crowds of the city. I have notes of cases extending over eight, nine, and even ten years, who even then were only driven to the hospital by the advent of some urgent, perhaps desperate, complication.

It is pretty clear, therefore, that the technique of marsupialization, as practised in Sydney, gives extremely satisfactory results, and I am convinced that in view of these results we should not be wise to make any great change in our methods.

In these 70 cases three hydatids were totally excised. These were all small cysts on the lower surface of the liver, all superficial, all the subjects of calcification. In one of these it was found possible to close the cavity in the liver with stitches. The other two were packed with gauze. One of the cases had a stormy convalescence, and nearly died. All these cases were the subjects of ordinary fluid hydatids, which were drained. The excisions were merely by-operations on small cysts accidentally discovered; whether these would have done any great harm if they had been left alone is another matter. As I showed in a former paper, the presence of an old calcified cyst appears frequently to cause neurotic phenomena in women, which may justify the running of a certain amount of risk by their removal. Possibly these phenomena may depend upon hepatoptosis, due to the weight of the nearly solid mass of fibrous tissue and lime salts which sooner or later takes the place of the hydatid.

Since reading Buckley's paper I discovered a small hydatid in the liver of a woman upon whom I was operating for gall stones; at the end of the operation I made an attempt to extirpate the hydatid, but it was so

densely adherent that I thought it wiser to desist. Either it will perish, as the result of the cholecystectomy, or, should it survive, it will require operation at a later date, when the patient is in a fit condition to stand further interference.

In one case the hydatid was so deep in the liver that it was deemed better to leave it alone, in the hope that the cyst might degenerate, or that it might reach a more accessible situation in the future.

The general technique at this hospital has become standardized by thirty years of experience, and does not differ materially with the surgeon. Access was obtained in 56 cases by the anterior route; in 19 by excision of a rib. Thus there were more operations than patients; in several cases there were multiple cysts, and in a few the cyst extended entirely through the liver, and a tube was passed from back to front of the patient.

The customary method is to expose the liver; usually the cyst is obvious on the surface. Should it not be seen the liver is palpated, and an aspirating needle is thrust into any dense mass observed. When fluid is withdrawn some surgeons inject a little pure formalin, with the idea of killing any live scolices; some merely leave the needle *in situ*, and quickly plunge a knife deep into the cyst. The finger rapidly follows the knife, and hooks the surface of the liver outside the abdomen, allowing the fluid to escape into a bucket. It usually rushes out with great force, so care is always taken that onlookers and assistants stand well clear of the torrent. The opening in the liver is then enlarged and the mother-cyst drawn out with ovum forceps. The inner surface of the adventitious cyst is next swabbed out with weak formalin or iodine solution, and the edges of the wound in the liver stitched with a continuous suture to the abdominal wall; a large tube is now inserted into the cavity, and the patient sent back to bed. In most cases recovery is rapid and complete.

Should it be necessary to resect a rib, access is obtained through the pleura and diaphragm; no collapse of the lung is ever observed. It is customary to stitch the edges of the orifice in the cyst and the diaphragm together to the abdomino-thoracic wall. Recovery is equally satisfactory.

There is no case in our records, so far as I have seen, where autoinfection during the operation has occurred.

The after-treatment simply consists of removing the tube in a few days, keeping the skin wound open with gauze or a small tube till complete healing takes place. Some surgeons wash out the cyst daily with weak iodine solution.

Should there be more than one cyst present, it may be necessary to make a second or even a third incision, but frequently it is possible to drain the second through the first by penetrating the thin wall of intervening liver tissue.

The operation, as can readily be imagined, is accompanied by little shock or haemorrhage, and the results on the whole are extremely good.

I would venture to remark, as a final criticism on Mr. Buckley's operation, that one of the cysts ruptured while it was being removed. The serious results of such an accident may easily be imagined, should scolices lodge in the large raw surface of the liver wound.

REFERENCE.

¹ BRITISH MEDICAL JOURNAL, September 20th, 1913, p. 725.

THE South Devon and East Cornwall Hospital and the Royal Albert Hospital, Devonport, each receives a bequest of £500 under the will of the late Mr. Robert Bayly of Annery, near Bideford, Devonshire.

THE following officers of the recently formed Association of Assistant Medical Officers of Asylums in England and Wales have been elected: *Chairman*, E. L. Dunn, Berkshire Asylum, Wallingford; *Honorary Treasurer*, W. Maule Smith, 2, Victoria Road, Bromsgrove; *Honorary Secretary*, F. J. Stuart, Berry Wood, Northampton.

IT is announced that owing to the diminution in his emoluments due to the smaller number of births, marriages, and deaths to be registered, the registrar of Matlock has resigned, believing that he will make a better living at his old trade of carpentering. He states that the fees have fallen from over £300 a year to less than £40.

TWO CASES OF TUBERCULOUS PERITONITIS AND SALPINGITIS WITH MENSTRUAL COMPLICATIONS.

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MR. ALBAN DORAN has kindly given me advice on the following cases and furnished me with references:

1. Intermittent Haematosalpinx attending Menstruation following Tuberculous Peritonitis and Salpingitis.

A girl, at the age of 5, began to suffer from attacks of abdominal pain, accompanied by vomiting and diarrhoea. The attacks were attributed to tuberculous peritonitis; her health was frail, but with unremitting care some improvement gradually ensued. Menstruation, which began at 13, was at first approximately normal, except for some clot. Later on it was accompanied by much general disturbance and also by severe abdominal pain, which was at its worst before the onset of the flow; with the pain there was a general swelling of the lower abdomen. Later, along with the general swelling, a special swelling came to be noted in the iliac region of each side; it was more marked on the left side, where the pain was usually more severe. The pain and swelling of the abdomen subsided as the menstrual flow set in. This flow came to resemble thick ink, except that towards the end it sometimes got thinner and redder.

I saw the patient first in July, 1910, at the age of 15. The menstrual period previous to my examination had been much the worst. She was a thin, slight girl, with normal breasts and pubic hair. The abdomen below the umbilicus was tumid; behind the left rectus there was a tense swelling 2 in. in diameter. During the following fortnight this swelling increased in size, and became more painful until a flow of thick, inky fluid began to escape. On the day before the operation there were ink-like stains on the diaper, and the nurse syringed blackish stuff from the vagina.

Operation.

An incision was made through the left rectus muscle, which exposed dense adhesions between coils of small intestines and the fundus of the uterus, and when these had been separated the tubes and ovaries were found matted together behind it; the appendix vermiformis was not involved.

Right Side.—The right ovary presented a cyst the size of a pullet's egg, which ruptured; the right tube was thickened, dilated, and twisted S-shape. There was a sharp kink in it about an inch from the uterus, but between the kink and the uterus the tube seemed normal. The portion removed was the cystic part of the ovary and the outer part of the tube, leaving 1 in. connected with the uterus, together with the remainder of the ovary.

Left Side.—The left ovary was covered by adhesions, but was separable from the left tube. This was more thickened and dilated than the right; it also had a sharp kink about 1 in. from the uterus. There remained on the left side after the removal the ovary covered by adhesions and 1 in. of the tube next to the uterus.

After-History.

The patient recovered slowly; a sinus formed at the lower angle of the wound which did not heal for a year; from it some blood-stained fluid escaped during menstruation. A year after the operation the patient was seen with the sinus definitely closed, and a marked improvement in her general health had taken place. She was still somewhat anaemic and had had nose-bleeding from the usual point on the septum, but menstruation was regular and normal; she emphasized the great benefit experienced from the absence of all abdominal pain during menstruation.

I have seen her recently—three years after the operation. She is now 18, has grown, is in good health, and has a fresh colour. Menstruation occurs regularly, and the flow is bright red without clots. The periods usually begin with slight pain in the right leg, but there is no abdominal pain, and she is not hindered in any way during her periods.

I took the portions of tubes removed to the College of Surgeons, where they are now in the museum (series Injuries and Diseases of the Female Organs of Generation, No. 201). Mr. Shattock at first thought the specimens an instance of primary carcinoma associated with tuberculosis, but, after further examination and consideration, concluded that the tubes showed a peculiar diffuse tuberculous infiltration.

2. Tuberculous Peritonitis and Salpingitis: Caseation: Menstrual Fistula.

This patient, seen in 1901 at the age of 18, had during girlhood been in weak health and subject to attacks of abdominal pain; lately she had become thinner, paler, and of an earthy aspect. Three weeks before I saw her, after a bicycle ride, a more severe attack of abdominal pain set in, with a temperature of 101° and a pulse of 100. This was followed by the formation of a resistant swelling behind the right rectus abdominis muscle. The patient at the time was so weak that I limited myself to an incision through the rectus, which exposed a cold abscess containing thin, curdy pus. She improved slowly, and ten weeks later menstruation occurred, with a discharge of blood-stained fluid through the opening. As a sinus persisted